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10/774,285	02/06/2004	Kerwin D. Dobbs	UC0406USCIP	8490

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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT PAPER NUMBER

1774

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/774,285

Applicant(s)

DOBBS ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-10,12,14-16,18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10,12,14-16,18,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

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1. This Office action is in response to applicant's amendment filed September 14, 2006, which amends the specification, amends claims 1, 2, 4-6 and 8-10, cancels claims 3, 11, 13, 17 and 19, and adds claim 22.

Claims 1, 2, 4-10, 12, 14-16, 18 and 20-22 are pending.

2. The rejection of claim 3 under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, as set forth in the Office action mailed May 15, 2006, is rendered moot by claim cancellation.

The rejection of claims 2, 4, 5, 10 and 16 under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, as set forth in the May 15<sup>th</sup> action is overcome by claim amendment.

The rejection under 35 U.S.C. 102(e) based on Lamansky et al. (US 6,911,271 B1) is overcome by claim amendment.

The rejection under 35 U.S.C. 102(e) based on Thompson et al. (US 2003/0124381 A1) is overcome by claim amendment.

The rejection under 35 U.S.C. 102(e) based on Kamatani et al. (US 6,953,628 B2) is overcome by claim amendment.

The rejection under 35 U.S.C. 103(a) based on Kamatani et al. (US 6,953,628 B2) is rendered moot by claim cancellation.

The rejection under 35 U.S.C. 103(a) based on Ma et al. (US 6,916,554 B2) or Thompson et al. (US 7,011,897 B2) is overcome by claim amendment.

3. The amendment filed September 14, 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The claim to priority based on Provisional Application Serial No. 60/347,910.

While the present application as originally filed claimed priority to Application No. 10/284,728 as being a CIP of the '728 application, no reference was made to the earlier filed '910 provisional application to which the '728 application claims priority. Accordingly, as originally filed, the present application did not claim the benefit of the '910 provisional application.

See MPEP 201.11.

If applicant desires to claim the benefit of a prior-filed application under 35 U.S.C. 119(e), a specific reference to the prior-filed application in compliance with 37 CFR 1.78(a) must be included in the first sentence(s) of the specification following the title or in an application data sheet. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications.

Since the instant application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application (emphasis added). See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the

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reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Applicant is required to cancel the new matter in the reply to this Office Action, or file a grantable petition as described in the preceding paragraph.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 2, 4-10, 12, 14-16, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (US 6,916,554 B2) or Thompson et al. (US 7,011,897 B2), either in view of Lamansky et al. (WO 02/15645 A1).

See the entire patent to Ma et al. In particular, see column 2, lines 41-67, c. 9, l. 4-c. 12, l. 30, Table 1 (c. 18) and the claims.

See the entire patent to Thompson et al. In particular, see column 3, line 27-c. 4, l. 57, c. 13, l. 3-c. 16, l. 49, Table 1 (c. 27-30) and the claims.

Each patent discloses emissive materials for use in the emissive layer (active layer) of an organic light emitting device (an electronic device). The emissive layer may comprise components in addition to the emissive material. The emissive materials are metal compounds having at least one ligand of present Formula IV. The metal may be platinum. For example, see c. 9, l. 30-50 of the Ma patent and c. 13, l. 30-51 of the Thompson patent. The metal compounds may have a ligand of present Formula IV and one or more ancillary ligands wherein the ancillary ligands may be monodentate ligands. For example, see c. 10, l. 46-48 and c. 11, l. 19-22 of the Ma patent, and see c. 14, l. 48-50 and c. 15, l. 24-28 of the Thompson patent.

Ma et al. and Thompson et al. teach that ligands disclosed on pages 89-90 of WO 02/15645 A1 may be used as the ancillary ligands. The ligands disclosed on page 90 of WO '645 include ligands which are monoanionic bidentate ligands ("–R" in which R can be hydrogen, halogen, alkyl or aryl), and ligands which are nonionic monodentate ligands (ligands of the third formula set forth on page 90). Page 91 of WO '645 also sets forth three formulae

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that represent nonionic monodentate ligands that can be used for the same purpose as the ligands set forth on pages 89-90.

With respect to present claims 4 and 12, neither Ma et al. nor Thompson et al. disclose a compound having a hydride ligand, but page 90 of WO 02/15645 A1 sets forth “-R” as a ligand and, as defined on page 91, R may be hydrogen, thus providing for a hydride ligand.

Each prior art reference discloses specific examples of metal compounds having at least one ligand of present Formula IV, but the specific examples are iridium compounds. For example, Ma's compounds 10 and 11, and Thompson's compound 17, are iridium compounds having a ligand of Formula IV wherein each of  $R^1$  and  $R^3$  is H, and  $R^2$  is CN. Thompson's compounds 3 and 4 are iridium compounds having a ligand of Formula IV wherein  $R^1$  and  $R^2$  are H, and  $R^3$  is  $CF_3$ . Thompson's compound 13 is an iridium compound having a ligand of Formula IV wherein  $R^1$  is  $NMe_2$ ,  $R^2$  is H, and  $R^3$  is  $CF_3$ .

Iridium and platinum are disclosed as “more” preferred metals, with iridium being the “most” preferred, and platinum compounds are encompassed by the claims of each patent. It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make other emissive materials within the scope of Ma's or Thompson's disclosure, particularly other emissive materials having other metals taught by Ma et al. or Thompson et al. and having ligands similar to those of Ma's or Thompson's specific examples, with the expectation that emissive materials having different metals but the same ligands would have similar properties and could be used for the same purpose. Given Ma's or Thompson's disclosure of iridium and platinum as more preferred metals, one of ordinary skill in the art

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would have been motivated to make platinum compounds similar to Ma's or Thompson's specific iridium compounds with the expectation platinum compounds would be suitable for use in the emissive layer of an organic light emitting device as taught in either reference. Regarding the number of ligands attached to platinum, Pt(II) is typically used in the art, and one of ordinary skill in the art at the time of the invention would have readily recognized that Pt(II) complexes according to Ma et al. could have a maximum of two bidentate ligands, or one bidentate ligand and two monodentate ligands.

Further, absent a showing of superior/unexpected results provided by a particular substituted phenylpyridine ligand and/or a particular combination of substituted phenylpyridine ligand and ancillary ligand(s), it is the examiner's position that it would have been within the level of ordinary skill of a worker in the art, guided by the teachings of Ma et al. or Thompson et al., to determine suitable combinations of substituents for the phenylpyridine ligand and suitable combinations of substituted phenylpyridine ligand and ancillary ligand(s). For example, regarding ligands wherein  $R^2$  is  $CF_3$  such as ligands of Formula V, VI and IX as set forth in present claim 6,  $CF_3$  meets the Hammett value limitation required for the substituent at the corresponding  $R_3$  position of Ma's compounds, and  $CF_3$  is specifically disclosed as usable for the substituent at the corresponding position of Thompson's compounds. Regarding the  $NMe_2$  substituent on the pyridine ring in present Formula VI and IX, a dialkylamino group at the corresponding position is taught as suitable for the  $R'$  substituent in the prior art compounds (e.g. see c. 10, l. 26-35 of the Ma patent and c. 14, l. 28-37 of the Thompson patent). As previously



noted, Thompson et al. also disclose a specific example of an iridium compound having a phenylpyridine ligand with NMe<sub>2</sub> at the corresponding position.

6. Applicant's arguments filed September 14, 2006 have been fully considered but they are not persuasive with respect to the patentability of the present claims over Ma et al. or Thompson et al., either in view of Lamansky et al.

Applicant argues that the primary references (Ma et al. and Thompson et al.) are not prior art because the present application claims priority to 60/347,910 through 10/284,710, and the '910 application was filed prior to the effective U.S. filing date of either of the primary references.

Applicant's arguments are persuasive because the benefit claim to prior application 60/347,910 has not been accepted for the reasons noted earlier in this action.

Applicant's arguments are also not persuasive because, even if the benefit claim to the '910 application were to be accepted, the '910 application does not provide full support for the compounds of Formula III as defined in the rejected claims. It is the examiner's position that the applied references suggest compounds within the scope of Formula III, as defined in the rejected claims, that are not supported by the '910 application.

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7. Claim 22 is objected to because of the following informality:

Claim 22 is lacking a period at the end of the claim. Appropriate correction is required.

Claim 22 will be allowable upon correction of this informality. The prior art does not disclose or suggest a compound having Formula 1 as defined in independent claim 22.

8. Additional patentable subject matter:

The prior art does not disclose or suggest compounds having Formula II as defined in present independent claims 1 and 8.

The prior art does not disclose or suggests compounds having Formula III wherein L<sup>1</sup> is selected from Formula VII and Formula VIII.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 7:00 a.m. to 3:30 p.m. Monday-Friday.

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The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY

November 17, 2006



MARIE YAMNITZKY  
PRIMARY EXAMINER

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